UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 6 1445 ROSS AVENUE, SUITE 1200 DALLAS, TX 75202-2733

ACTION MEMORANDUM/ENFORCEMENT

SUBJECT: Request for a Time Critical Removal Action at the Buffalo Compressor Station

Site, Harper County, Oklahoma

FROM: Rita Engblom, Federal On-Scene Coordinator

Superfund Division (6SF-R1)

THRU: Charles A. Gazda, P.E., Chief

Response and Prevention Branch (6SF-R)

TO: Myron O. Knudson, P.E., Director

Superfund Division (6SF)

I. PURPOSE

This Memorandum requests approval of a Time Critical removal action in accordance with the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9604, at the Buffalo Compressor Station site located one mile northeast of the city of Buffalo, in Harper County, Oklahoma. The facility encompasses 18 acres. The removal action is to address polychlorinated biphenyls ("PCBs") contamination in soil and on drain/air lines at the site.

This action meets the criteria for initiating a removal action under Section 300.415 of the National Contingency Plan ("NCP"), 40 CFR § 300.415. This action is expected to require less than twelve months and \$2 million to complete.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID#: OK0000605396 Category of Removal: Time-Critical

Site ID#: MN

National Significance: Removal Action

A. <u>Site Description</u>

1. Removal Site Evaluation

915180



Williams Gas Pipelines Central, Inc., f/k/a Williams Natural Gas Company ("WGPC") operates a high-pressure natural gas pipeline transmission and distribution system in several southern and Midwestern states. Compressor stations, such as the Buffalo Compressor Station site are located at various points along the pipeline to maintain necessary gas pressures.

Due to the heat resistant and fire retardant characteristics of PCBs, they were used in lubricants and cooling fluids at these compressor stations. The Buffalo Station was in service from the mid 1960s to the early 1970s. The WGPC began investigating the Buffalo Station site in 1994 to determine whether PCB-contaminated lubricants had been released to the environment or provided a threat of release to the environment.

2. Physical Location

The Buffalo Compressor Station site is located approximately one mile northeast of Buffalo, Oklahoma, and is an 18-acre facility. The property is located in the NE ¹/₄ of Section 1, Township 27 North, Range 23 West (See Attachment 1). The site is located in an area that is rural and primarily used for agricultural purposes.

There is one residence immediately north of the site. The population of Buffalo, one mile northeast of the site, is approximately 1,620. Currently, the site could be classified as a low occupancy area in accordance with 40 CFR § 761.3. However, the future land use of this site is unknown and for purposes of this removal action, the site is classified as a high occupancy area.

Topography is nearly level to gently sloping plains. Surface water runoff is to an intermittent stream located approximately $\frac{1}{8}$ of a mile east of the site, and to a tributary to Buffalo Creeks located approximately $\frac{1}{4}$ of a mile west of the site.

3. Site Characteristics

According to WGPC, the Buffalo Compressor Station site has not been operational since the early 1970s. During the 1980s, the above ground site structures (e.g. buildings, equipment) were removed. The site currently consists of building foundations and concrete pads from the former engine room and auxiliary building, the engine room basement, piping in the former air receiver area, and the fin fans area. Additionally, on the western half of the site, there is an impoundment approximately 80 feet by 80 feet in size that was backfilled with soil when the site was operational (See Attachment 2).

In April 1994, WGPC investigated the site to determine whether PCBs had migrated from the air compressor units to the air line header, the engine room basement, or soil in the former air receiver area, the former air discharge area, the former prelube air pipe area, and the backfilled impoundment. The results of this investigation revealed a PCBs concentration of 38 mg/kg in one sample collected from the former air receiver area. Four other samples contained PCBs concentrations ranging from 9.4 to 21.0 mg/kg.

In 1995, WGPC collected wipe samples to evaluate the presence of PCBs on metallic and concrete surfaces including concrete floors and pipe chases. Of the 48 wipe samples submitted for laboratory analysis, nine contained PCBs concentrations exceeding $10 \,\mu g/100 \, cm^2$: one from the floor of the auxiliary area, seven from auxiliary area pipe chases, and one from a pipe to the air receivers. The WGPC also removed the water (which did not contain PCBs) as well as the sludge and oil that had collected in the engine room basement. Oil and sludge samples were collected and analytical results revealed no PCBs concentration exceeding 1.0 mg/kg.

In 2000, WGPC performed additional soil and wipe sampling. Soil samples were collected from the former impoundment and also from the air receiver discharge area. Soil samples collected from the impoundment were analyzed for PCBs, RCRA metals, and SVOCs; soil samples collected from the air receiver discharge area were analyzed for PCBs. Analytical results indicated that two of the grids in the impoundment had PCBs concentrations exceeding 10 mg/kg. One sample documented PCBs at 25.3 mg/kg and one sampled detected PCBs at 15.7 mg/kg. RCRA metal and SVOC concentrations detected in the impoundment did not exceed regulatory criteria.

Sixteen wipe samples were collected from the air lines, drain lines, and a concrete floor drain (located in the auxiliary area) that had not previously been sampled. Seven of the 16 wipe samples collected contained surface concentrations of PCBs greater than 10 µg/100 cm².

In March 2002, four additional grids from the impoundment were sampled. The 0"-72" intervals sampled in these grids had PCBs concentrations greater than 1 mg/kg, prompting analysis at greater depths. Analytical results of the (72"-78") interval, indicated that four grids had PCBs concentrations of: 2.0 mg/kg, 1.0 mg/kg, 6.4 mg/kg, and 1.0 mg/kg. At the (84"-90") interval, four grids had PCBs concentrations of: 3.4 mg/kg, 1.3 mg/kg, 1.8 mg/kg, 1.3 mg/kg. At the (96"-102") interval, two grids had PCBs concentrations of: 1.4 mg/kg, and 0.72 mg/kg.

A summary of these investigations indicates four potential areas to be addressed by this removal action. The areas of concern include:

- <u>Impoundment Area</u> Approximately 1,215 cubic yards of PCBs contaminated soil;
- <u>Air Lines</u> Approximately 200 linear feet of underground air line piping associated with the air system;
- <u>Drain Lines</u> Approximately 400 feet of drain line is associated with discharge to the impoundment; and,
- Air Receiver Area Approximately 30 cubic yards of PCBs contaminated soil.

 Release or Threatened Release into the Environment of a Hazardous Substance, or Pollutant or Contaminant

PCBs have been detected in soils and on air and drain lines at the site. PCBs are listed as hazardous substances pursuant to 40 CFR §302.4. As such, they are "hazardous substances" as defined in Section 101(14) of the CERCLA, 42 U.S.C. §9601(14).

NPL Status

This site is not on and is not proposed for listing on the National Priorities List.

6. Maps, pictures and other graphic representations

Attachment 1 Site Location Map

Attachment 2 Site Map

Attachment 3 Enforcement Addendum

B. Other Actions to Date

1. Previous Actions

In 1995, WGPC performed concrete cleaning and removal of piping inside the building where the previous investigations had detected elevated concentrations of PCBs. Wipe samples were collected to verify the attainment of cleanup criteria. Any location where the verification sample exceeded $10 \,\mu\text{g}/100 \,\text{cm}^2$ of PCBs was cleaned and resampled until all target areas were below $10 \,\mu\text{g}/100 \,\text{cm}^2$ of PCBs. Approximately 3,000 square feet of concrete were chemically cleaned of PCBs.

2. Current Actions

No response actions are currently underway at the site.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

There have been no state or local actions taken to date.

2. Potential for State/local Response

The Oklahoma Department of Environmental Quality will provide assistance in oversight of this removal action.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Section 300.415 of the NCP lists the factors to be considered in determining the appropriateness of a removal action. Paragraphs (b)(2)(i), (ii), (v), and (iv) directly applied to the conditions at the Site. Any one of these factors may be sufficient to justify a removal action.

1. Exposure to Human Populations, Animals or the Food Chain, NCP Section 300.415.(b)(2)(i)

There is potential for exposure of human populations and animals to PCBs which is a hazardous substance substance as defined in CERCLA Section 101(14), 42 U.S.C. 9601(14), and further defined at 40 CFR §302.4. Release of these contaminants has been identified through site assessment, and there is a threat of further release. People and animals coming on to the site could be exposed to these contaminants through ingestion, skin contact and inhalation pathways.

PCBs are toxic chemicals which are extremely stable and persistent in the environment. PCBs are toxic to humans, causing liver damage, adverse skin effects, and changes in other biological functions, and are regarded by the EPA as probable human carcinogens. PCBs bioaccumulate in humans and other organisms, which means that PCBs accumulate over time in living tissues in concentrations much higher than the concentrations to which the organisms are exposed in the environment.

Routes of human exposure of PCBs include inhalation of PCB-contaminated dust, direct contact with and ingestion of PCB-contaminated dust, direct contact with and ingestion of PCB-contaminated soil, and ingestion of fruits, vegetables or animals contaminated by exposure to PCB-contaminated soil. In addition, PCBs may be volatilized into the air and subsequently inhaled by humans.

PCBs have the potential to bioaccumulate in the food chain due to the lipophilic nature of the compound. For acute exposures, The Agency for Toxic Substances and Disease Registry ("ATSDR") reports liver damage effects in animals at ingestion dosages of approximately 0.4 to 0.8 mg/kg/day. The ATSDR also reports adverse effects on unborn animals at ingestion dosages of approximately 3 to 13 mg/kg/day and death in animals at ingestion dosages of approximately 750 mg/kg/day for acute exposures. ATSDR also reports death in animals at skin contact dosages of approximately 1250 mg/kg/day.

For chronic exposures (greater than 14 days), ATSDR reports effects on unborn and newborn animals at ingestion dosages of approximately 0.005 to 0.1 mg/kg/day; liver and skin damage and death are reported at ingestion dosages of approximately 0.1 mg/kg/day or greater. ATSDR also reports, liver and kidney damage in animals at skin contact dosages of approximately 100 mg/kg/day.

The levels of PCBs found during the site investigation exceed the levels identified above as presenting potential health problems in human populations. Nearby residents or on-site workers are subject to adverse exposure to these contaminants by inhalation of airborne particulate containing one or more of the contaminants, by direct contact and by ingestion of dusts and soils. Also, there is an increased threat to human health, animals and the food chain from the migration of contaminants subject to entrainment, windblown deposition and surface runoff.

The lack of restricted access to the property and the proximity of residents to the contaminated areas on site increases the potential for exposure to human populations.

2. Contamination of Drinking Water Supplies or Sensitive Ecosystems, NCP Section 300.415(b)(2)(ii)

The Buffalo Compressor Station is located in Harper County which is in the land area underlain by the High Plains aquifer. The High Plains area is a major agricultural area, supported primarily by water from the High Plains aquifer, which is used to irrigate wheat and corn and to raise cattle and swine. The High Plains aquifer underlies about 174,000 square miles in parts of eight states, including about 7,100 square miles in northwestern Oklahoma which includes Beaver, Cimarron, Dewey, Ellis, Harper, Texas, and Woodward Counties. The High Plains aquifer is composed of clay, silt, sand and gravel, with the sand and gravel layers contributing most of the water to wells. Depth to water in the High Plains of Oklahoma ranges from less than 10 feet to more than 300 feet below the land surface.

Properties in the vicinity of the site are generally rural and agricultural in nature. The nearest surface water to the site is an intermittent stream located one-eighth mile east of the site, and a tributary to Buffalo Creek located approximately one-quarter mile west of the site. Based on surface topography, ground water flow appears to be generally to the southeast. However, ground water flow direction can be influenced locally and regionally by subsurface topography, recharge and discharge areas; horizontal/vertical inconsistencies in the types and locations of subsurface soil and bedrock; and proximity to water pumping wells.

3. Contaminants in Soils, NCP Section 300.415.(b)(2)(iv)

PCBs are hazardous substances as defined in CERCLA Section 101(14), 42 U.S.C. § 9601(14), and further defined at 40 CFR §302.4. Sample results indicated that PCBs contamination exceeded 25 mg/kg in one soil sample collected from the former air receiver area with 38 mg/kg. Four additional soil samples contained PCBs concentrations between 9.4 and 21.0 mg/kg.

4. Weather Conditions That May Cause the Release or Migration of Hazardous Substances, NCP Section 300.415(b)(2)(v)

The area receives an average of 29 inches of rain annually and 16 inches of snow. The contaminants are subject to migration by entrainment, windblown deposition and surface runoff.

B. Threats to the Environment

The levels of PCBs in soils at this site present a potential health problem to animal life that comes into contact with contaminated soil and to freshwater aquatic life that receives runoff from this site.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. <u>Proposed Actions</u>

1. Proposed Action Description

In accordance with Toxic Substances Control Act ("TSCA"), 40 CFR § 761.61(a)(4) the clean-up level for soil in a high occupancy area is to less than 1 ppm in soil or to less than 10 ppm with a cap meeting the requirements of 40 CFR § 761.61(a)(7) and (a)(8). In accordance with 40 CFR § 761.61(a)(4)(ii) the clean-up level for non-porous surfaces in high occupancy areas, the surface PCBs cleanup standard is $10 \,\mu g/100 \,\mathrm{cm}^2$ of surface area.

Underground Air Lines/Drain Line to Impoundment:

Approximately 600 feet of PCBs contaminated piping (air and drain lines) that tested above $10 \,\mu\text{g}/100\text{cm}^2$ of PCBs will be removed for off-site disposal. Removal of lines will begin with excavation of a 2- to 4-foot trench to expose the pipe along the length to be removed. Prior to and following removal, the lines will be inspected for evidence of holes, breaks, or leaks.

If a defect is found in the line, one soil sample of PCBs analysis will be collected below the center point of each identified defect. If no defects are found, no sampling will be performed. If PCBs contamination is detected, the soil will be excavated to achieve a PCBs concentration of less than 1 mg/kg of PCBs or less than 10 mg/kg of PCBs with a cap. If analysis of PCBs at the location of a defect is above 1 mg/kg, an area 10-feet by 2-feet, centered on the contaminated sample location, will be excavated to a depth of 10

inches (approximately 17 ft³). Samples will be collected from the corners and center of the excavated grid and analyzed of PCBs. If any sample analyses documents PCBs concentrations greater than 1 mg/kg, another 10" from a 10-foot by 2-foot area will be excavated or the area may be capped, if concentrations in the soil are less than 10 mg/kg of PCBs.

Once the integrity of a line has been determined and any contaminated soils identified and removed, the line will be checked for liquids and explosive atmospheres. If liquids are present, a vacuum will be used to collect liquids for off-site disposal. Liquids from these lines are expected to have concentrations of PCBs less than 50 ppm, and are classified as incidental sources of PCBs that may be sent to an off-site landfill with excavated soils from the site.

Once lines are cleared they will be cut into appropriately sized sections for direct disposal. A containment structure will be constructed under each immediate cutting zone to prevent the accidental release of PCBs to the soil.

In addition to removing the air lines and drain line previously identified to exceed $10 \,\mu\text{g}/100\text{cm}^2$ of PCBs, the lateral extent of surface PCBs contamination from the main drain/air lines will be investigated as taps are discovered. Additional, wipe samples will be collected from lateral lines to trace and remove additional piping that tests above $10 \,\mu\text{g}/100\text{cm}^2$ of PCBs. If these lines are determined to be in low occupancy areas (dependent on depth) they may remain in place, in accordance with 40 CFR 761.61(a)(4)(ii) if the surface area is below $100 \,\mu\text{g}/100\text{cm}^2$ of PCBs.

Impoundment:

Soil that exceeds 1 mg/kg of PCBs will be excavated to a maximum depth of 20 feet. If soils remain above 1 mg/kg of PCBs but less than 10 mg/kg a cap will be constructed over the contaminated area. Approximately1,215 cubic yards of soil will be removed from the impoundment area for proper treatment and disposal based upon a clean-up level of 1 mg/kg of PCBs. If a clean-up level of 10 mg/kg of PCBs is applied, approximately 831 cubic yards of soil will be removed.

Air Compressor Area

Soil will be excavated from the air compressor area to a depth of two feet, resulting in a removed volume of approximately 30 cubic yards.

Final soil verification sampling will be conducted after the field sampling and analysis indicate clean-up levels have been achieved at all locations where soil has been excavated for off-site disposal.

PCB-containing excavated soils will be loaded into lined transfer boxes, front-end loader, dump truck, or other equivalent conveyance equipment and staged. Stockpiles will be lined and bermed to prevent the migration of PCBs to clean soil. In addition, soil may be loaded directly onto trucks at each excavation area in lieu of staging.

All excavation areas will be backfilled, graded to previous contours, capped (if soils remain with PCBs concentrations that are greater than 1 mg/kg) and covered with at least 10 inches of clean topsoil. General measures for erosion control will be implemented, including the placement of silt fences, where appropriate, and seeding.

All off-site transportation and disposal will be done in accordance with applicable U.S. Department of Transportation ("USDOT") requirements and in compliance with the EPA's Off-Site Rule. All requirements under the Occupational Safety and Health Act ("OSHA") of 1970, 29 U.S.C. § 651 et seq., and under the laws of the State, approved under Section 18 of the Federal OSHA laws, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include Hazardous Materials Operation, 20 CFR § 1910, as amended by 54 Fed. Reg. 9317 (March, 1989), all OSHA General Industry (29 CFR § 1910) and Construction (29 CFR § 1926) standards wherever they are applicable, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR § 300, relating to the conduct of work at Superfund sites.

Other requirements under the OSHA of 1970, 29 U.S.C. § 651 et seq., and under the laws of a State with an approved equivalent worker safety program, as well as other applicable safety and health requirements, will be followed. Federal OSHA requirements include, among other things, Hazardous Materials Operation, 20 CFR § 1910, as amended by 54 Fed. Reg. 9317 (March 1989), all OSHA General Industry (29 CFR § 1910) and Construction (29 CFR § 1926) standards wherever they are relevant, as well as OSHA record keeping and reporting regulations, and the EPA regulations set forth in 40 CFR § 300 relating to the conduct of work at Superfund sites.

2. Contribution to Remedial Performance

Because this action constitutes source control, these actions are cost effective and consistent with any long term remediation strategies that may be developed for the site.

3. Description of Alternative Technologies

EPA considered using alternate treatment technologies rather than excavation to achieve the soil cleanup levels specified in Section V.A.1., above. The EPA's policy regarding the use of alternative technologies for removal actions, as described in the Office of Solid Waste and Emergency Response Directive 9380.2-1 "Administrative Guidance for Removal Program Use of Alternatives to Land Disposal," is that the alternative technology must provide for timely response

and protection of human health and the environment. The policy also establishes three criteria to consider in considering use of alternative technologies: effectiveness, implementability, and cost.

Thermal destruction is identified in the Superfund Technology Screening Guide for Treatment of CERCLA Soils and Sludges (EPA/540/2-88/004) as the only demonstrated effective treatment technology of PCBs. Other potentially effective technologies include dechlorination, bioremediation, chemical extraction, soil washing, and solidification/ stabilization.

Soil washing and solidification/stabilization were not considered viable treatment options as both are considered only potentially effective for PCBs remediation and further research would compromise the removal objective of timely response. The treatment alternatives of thermal desorption, solvent extraction or dechlorination would likely result in a project length of 6-12 months (or more), due to treatability testing. In addition, thermal desorption, solvent extraction or dechlorination are estimated to add significant costs to the project, relative to excavation and landfilling, with little or no anticipated risk reduction than would be achieved by excavation and landfilling. Incineration is timely, protective of human health and the environment, effective and implementable. However, this technology is estimated to cost an average of four to six times that of excavation and off-site landfilling, with little or no anticipated risk reduction over what would be achieved by excavation and landfilling.

4. Applicable or Relevant and Appropriate Requirements ("ARARs")

This removal action will be conducted to abate the actual or potential release of a hazardous substance, pollutant, or contaminant to the environment, in accordance with CERCLA, 42 U.S.C. § 9601 et seq., and in a manner consistent with the National Contingency Plan, 40 CFR § 300, as required at 33 U.S.C. § 1321(c)(3) and 42 U.S.C. § 9604 (a)(1). As stated at 40 CFR § 300.415(j), fund-financed removal actions under CERCLA Section 104 and removal actions under CERCLA Section 106 shall, to the extent practicable considering the exigencies of the situation, attain the ARARs under Federal environmental law.

ARARs are set forth in the TSCA codified at 40 CFR § 700 for the disposal, cleanup and verification sampling of PCBs spills.

The RCRA waste analysis requirements found at 40 CFR §§ 261.20 and 261.30, RCRA manifesting requirements found at 40 CFR § 262.20, and RCRA packaging and labeling requirements found at 40 CFR § 262.30 are ARARs for this removal action. Because on-site storage of hazardous wastes will not exceed ninety days, specific storage requirements found at 40 CFR § 265 are not ARARs. <u>See</u> 40 CFR § 262.34.

5. Project Schedule

After the Action Memorandum is signed, it is anticipated that the initial excavation and cleanup action will commence within 60 days. On-site excavation will take approximately 15 days. Total project length will be approximately 15-30 days.

B. Estimated Costs

This action is expected to be performed by WGPC. The estimated cost of oversight of this action is approximately \$21,500.

ESTIMATED COSTS

Extramural Costs

ERRS	\$	N/A
START	\$	14,000.00
Subtotal, Extramural Costs	\$	14,000.00
TOTAL, EXTRAMURAL COSTS	\$	14,000.00
Intramural Costs		
EPA Regional Direct Costs	\$	5,000.00
EPA Regional Indirect Costs	\$	2,000.00
EPA Headquarters Costs	\$	N/A
TOTAL, INTRAMURAL COSTS	\$	7,000.00
Subtotal, Intramural and Extramural Contingency	\$ \$	21,000.00 500.00
TOTAL, CERCLA REMOVAL PROJECT CEILING	\$	21,500.00

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The proposed actions for the Buffalo Compressor Station site should be taken immediately. Should these actions be delayed, the potential threats to human health and the environment will increase. A substantial amount of the PCBs contamination is in an unrestricted access area, with a rural population nearby.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

See attached confidential Enforcement Attachment (Attachment 3).

IX. RECOMMENDATION

This decision document represents the selected removal action for the Buffalo Compressor Station Site, in Buffalo, Oklahoma, developed in accordance with CERCLA, 42 U.S.C.§ 9601 et seq., and consistent with the NCP, 40 CFR § 300. This decision is based on the administrative record for the Site.

Conditions at the site meet the NCP section 300.415(b)(2) criteria for a removal and I recommend your approval of the proposed removal action. The total project ceiling, if approved, will be \$21,500.00. None of this funding will come from the Regional removal allowance.

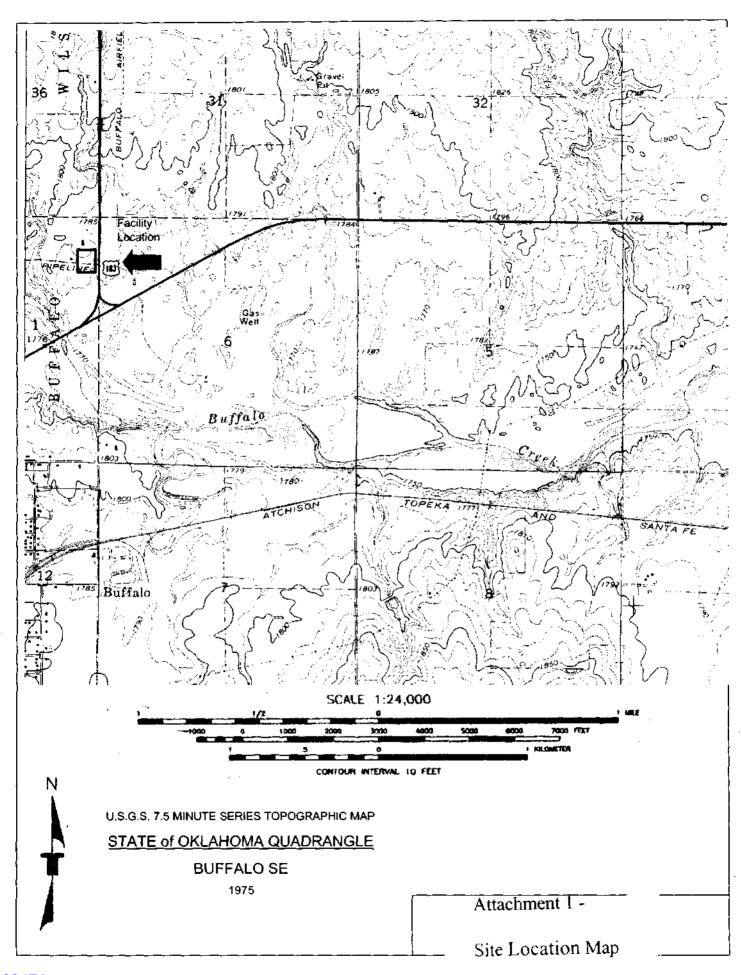
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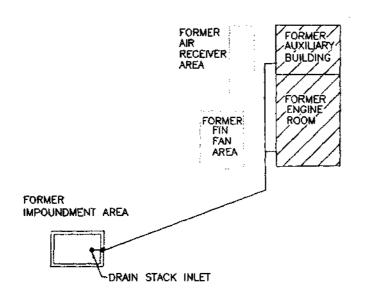
Approved:

Myron O. Knudson, P.E., Director

Superfund Division

Attachments





BUFFALO COMPRESSOR STATION NE 1/4, NE 1/4, SEC.1, T 27N, R 23 W HARPER COUNTY, OKLAHOMA



Attachment 2 -

Site Map

BIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

ENFORCEMENT ATTACHMENT TO THE ACTION MEMORANDUM FOR BUFFALO COMPRESSOR STATION SITE ENFORCEMENT SENSITIVE

May 20, 2002

NOTE:

This document has been withheld as Enforcement Confidential and is located in Separate "CONFIDENTIALITY FILING" at U.S. EPA, Region 6